REMARKS

Reconsideration and allowance of the above-identified application are respectfully requested.

Claims 1-52 are currently pending, wherein claims 1, 13, 26 and 39 are independent.

Applicants note with appreciation the acceptance by the Patent Office of the drawings filed on August 17, 2004.

Applicants further note with appreciation the acknowledgment by the Patent Office of the Information Disclosure Statement previously submitted to the Patent Office on November 4, 2004.

The specification has been amended merely to clarify that a "check node" can also be referred to as an "equation node." These amendments are fully supported by the present application. No new matter has been introduced by way of these amendments.

Applicants would like to thank Examiner Curtis Odom for the personal interview conducted on February 17, 2005. In compliance with M.P.E.P. § 713.04, the substance of that interview is incorporated in the following remarks.

Applicants note that in the Office Action mailed May 17, 2004 (hereinafter the "May 17th Office Action"), the Patent Office indicated that claims 1-3, 5-8, 13-15, 17-20, 26-28, 30-33, 39-41 and 43-46 were allowable if the objections cited in the May 17th Office Action were overcome. More particularly, the Patent Office indicated that claims 1-3, 5-8, 26-28, 30-33, 39-41 and 43-46 were allowed. It is respectfully noted that *no* rejection or objection was made to claims 1-3, 5-8, 26-28, 30-33, 39-41 and 43-46 in the May 17th Office Action. In addition, claims 13-15 and 17-20 were objected to, although no reason for the objections was given in the May 17th Office Action. It is respectfully submitted that claims 1-3, 5-8,

13-15, 17-20, 26-28, 30-33, 39-41 and 43-46 are allowed, as the Patent Office has proffered *absolutely no* indication that the previous allowance of these claims has been withdrawn.

Consequently, the Patent Office is respectfully requested to either indicate the allowance of claims 1-3, 5-8, 13-15, 17-20, 26-28, 30-33, 39-41 and 43-46, or indicate that the allowance has been withdrawn.

During the interview, the rejection of claims 1-52 under 35 U.S.C. § 112, second paragraph for alleged indefiniteness was discussed. No agreement was reached. These rejections are respectfully traversed.

More particularly, the Patent Office asserts that all variables in each claim must be defined in the claim. [*see* Office Action, page 2] With respect to claims 1-52, the Patent Office states that the variables "llrR_{ml}" and "llrQ_{lm}" must be defined in the claims. The Patent Office asserts that the variable "s_m," recited in claims 3, 15, 28 and 41, must be defined in the claims. Furthermore, the Patent Office states that the variable "llrP_l," recited in claims 4, 16, 29 and 42, must be defined in the claims. In addition, the Patent Office asserts that the variable "llrAPP_l," recited in claims 9-12, 21-25, 34-38 and 47-52, must be defined in the claims. Additionally, the Patent Office notes that the specification of the present application defines the acronym "llr" as "log-likelihood ratio," and the Patent Office asserts that this definition must be recited in the claims. The Patent Office also notes that the specification defines the acronym "APP" as "a posteriori probability," and the Patent Office asserts that this definition must also be recited in the claims.

It is respectfully submitted that the Patent Office's assertion that the definition of all terms in a claim must be recited in the claim is incorrect, contrary to established tenets of

patent law, and exhibits a clear misunderstanding of the requirements of 35 U.S.C. § 112, second paragraph.

According to M.P.E.P. § 2173.01,

> [a] fundamental principal contained in 35 U.S.C. 112, second paragraph is that applicants are their own lexicographers. They can define in the claims what they regard as their invention essentially in whatever terms they choose *so long as any special meaning assigned to a term is clearly set forth in the specification* . . . . Applicant may use functional language, alternative expressions, negative limitations, or any style of expression or format of claim which makes clear the boundaries of the subject matter for which protection is sought. As noted by the court in *In re Swinehart*, 439 F.2d 210, 160 USPQ 226 (CCPA 1971), a claim may not be rejected solely because of the type of language used to define the subject matter for which patent protection is sought. [M.P.E.P. § 2173.01 (emphasis added)]

Furthermore,

> [t]he meaning of every term used in a claim should be apparent from the prior art or from the specification and drawings at the time the application is filed . . . . *When the specification states the meaning that a term in the claim is intended to have, the claim is examined using that meaning*, in order to achieve a complete exploration of the applicant's invention and its relation to the prior art. [M.P.E.P. § 2173.05(a) (emphasis added)]

Accordingly, so long as the specification states the meaning that a term in a claim is intended to have, the Patent Office's assertion that all variables or terms in each claim must be defined in the claim is wholly and completely incorrect, exhibits a total and thorough misunderstanding of the requirements of 35 U.S.C. § 112, second paragraph, and flies in the face of the "fundamental principle" contained in 35 U.S.C. § 112, second paragraph that applicants can be their own lexicographers.

Applicants respectfully note that the specification of the present application clearly discloses the "special meaning" of the terms "LLrR_{ml}," "LLrQ_{lm}," "s_m^i," "LLrP_{l}," and "LLrAPP_{l}". At page 18, line 3, the term "LLrR_{ml}" is disclosed as "[t]he information from

equation node m to bit node 1, one for each connection." [present application, page 18, lines 3-4] At page 18, line 1, the term "$\mathrm{llrQ_{lm}}$" is disclosed as "[t]he information from bit node 1 to equation node m, one for each bit." [present application, page 18, lines 1-2] At page 20, line 20, the term "s_m^i" is disclosed as "the sign of the mth equation." [present application, page 20, line 20] At page 17, line 29, the term "$\mathrm{llrP_l}$" is disclosed as "[t]he soft information from channel APP (*a posteriori* probability) decoder or soft channel decoder 504 for the first iteration or from decision aided equalization circuit 856 for subsequent iterations, one for each bit." [page 17, lines 29-31] At page 18, line 5, the variable "$\mathrm{llrAPP_l}$" is disclosed as "the overall soft information after each iteration, one for each bit." [present application, page 18, line 5] Consequently, it is respectfully submitted that the specification of the present application clearly sets forth the "special meaning" assigned to these terms, in complete compliance with the mandates of 35 U.S.C. § 112, second paragraph. Therefore, the Patent Office's assertion that the aforementioned terms must be defined in the claims is unwarranted and unfounded.

In addition, it is respectfully noted that the *designations* of the terms "$\mathrm{llrR_{ml}}$," "$\mathrm{llrQ_{lm}}$," "s_m^i," "$\mathrm{llrP_l}$," and "$\mathrm{llrAPP_l}$" are properly recited in the claims and properly disclosed in the specification of the present application. The Patent Office is correct to note that some of these terms contain the letters "llr" and "APP." However, these letters merely happen to form part of the name of the term. To require Applicants to define the acronyms "llr" and "APP" in each claim exhibits a fundamental misunderstanding of the meaning and designations of these terms in the claims, as well as a fundamental misunderstanding of the

requirements 35 U.S.C. § 112, second paragraph. It is respectfully submitted that no such definitions are appropriate, warranted or required.

Contrary to the assertions of the Patent Office, given that Applicants can be their own lexicographers and that the meaning of these terms is apparent from the specification, it is respectfully submitted that claims 1-52 particularly point out and distinctly claim the subject matter for which the Applicants regard as the invention.

If this rejection is repeated, the Patent Office is requested to cite the statutory authority that requires that all terms in a claim must be defined in the claim when the specification clearly states the meaning that the terms in the claim are intended to have. It is respectfully submitted that no such requirement exists under 35 U.S.C. § 112, second paragraph.

Accordingly, reconsideration and withdrawal of these grounds of rejection are respectfully requested.

All of the rejections raised in the Office Action having been addressed, it is respectfully submitted that the present application is in condition for allowance and a notice to that effect is earnestly solicited. Should the Examiner have any questions regarding this response or the application in general, the Examiner is urged to contact the Applicant's attorney, Andrew J. Bateman, by telephone at (202) 625-3547. All correspondence should continue to be directed to the address given below.

Respectfully submitted,

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